

Abstract

**DNA sequences coding for enzymes capable of facilitating the synthesis of linear  $\alpha$ -1,4 glucans in plants, fungi and microorganisms**

The invention relates to DNA sequences coding for proteins having the enzymatic activity of an amylosucrase which allows the synthesis of linear  $\alpha$ -1,4 glucans from the substrate sucrose by bacteria, fungi and plants or in cell-free systems.

The invention furthermore describes plasmids and bacteria containing these DNA sequences as well as processes for the production of plants and microorganisms capable of intracellularly or extracellularly expressing a polypeptide having amylosucrase activity.

The invention furthermore relates to the production of pure fructose using proteins exhibiting the enzymatic activity of amylosucrase.